CLAIMS

1. A multi-nozzle ink jet head having a plurality of nozzles, comprising:

a head substrate in which are formed said plurality of nozzles and a plurality of pressure chambers;

a diaphragm that comprises a common electrode layer and a rigid layer and covers each of said plurality of pressure chambers;

a plurality of piezoelectric elements provided in correspondence with said pressure chambers on said diaphragm; and

a plurality of individual electrodes provided on said piezoelectric elements in correspondence with said piezoelectric elements;

wherein the thickness of said common electrode layer is within a range such that the lag in the rise time when driving all of said piezoelectric elements of said head relative to the rise time when driving a single one of said piezoelectric elements results in a positional shift of not more than half a dot of a recorded dot formed by a minimum ink amount flying.

2. The multi-nozzle ink jet head according to claim 1, wherein the thickness of said common electrode layer is within a range such that the time for a driving waveform to rise to 67% of an ideal waveform results in a positional

shift of not more than half a dot of a recorded dot formed by a minimum ink amount flying.

3. The multi-nozzle ink jet head according to claim 1, wherein the thickness of said common electrode layer is 0.1μm.

4. A multi-nozzle ink jet head having a plurality of nozzles, comprising:

a head substrate in which are formed said plurality of nozzles and a plurality of pressure chambers;

a diaphragm that comprises a common electrode layer and a rigid layer and covers each of said plurality of pressure chambers;

a plurality of piezoelectric elements provided on said diaphragm in correspondence with said pressure chambers; and

a plurality of individual electrodes provided on said piezoelectric elements in correspondence with said piezoelectric elements;

wherein that said common electrode layer has 3 or more earth contacts.

5. The multi-nozzle ink jet head according to claim 4, wherein a plurality of contact parts are provided for exposing the earth contacts of said common electrode layer from said head.

6. A multi-nozzle ink jet head having a plurality of nozzles, comprising:

a head substrate in which are formed said plurality of nozzles and a plurality of pressure chambers;

a diaphragm that comprises a common electrode layer and a rigid layer and covers each of said plurality of pressure chambers;

a plurality of piezoelectric elements provided on said diaphragm in correspondence with said pressure chambers; and

a plurality of individual electrodes provided on said piezoelectric elements in correspondence with said piezoelectric elements;

wherein a low-resistance layer is provided on said common electrode layer in a position parallel to a row of said piezoelectric elements.

7. The multi-nozzle ink jet head according to claim 6, wherein said common electrode layer has a plurality of earth contacts.

8. The multi-nozzle ink jet head according to claim 7, wherein a plurality of contact parts are provided for exposing the earth contacts of said common electrode layer from said head.

9. The multi-nozzle ink jet head according to claim

8, wherein said plurality of contact parts are provided on said low-resistance layer.